

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method for monitoring a transmission of data packets, each of which having a payload data, between at least two network subscribers, comprising:

safety-based monitoring of an error-based limit value, which is and/or can be predetermined, being carried out on a transmission medium for response to identified incorrectly transmitted data packets and identified correctly transmitted data packets;

transmitting a data record within the payload data in each data packet;

wherein each of the data records is expected by at least one network subscriber and used to determine whether the data packets have been transmitted incorrectly or correctly before the respective data packets are completely received by the at least one network subscriber.

2. (Previously presented) The method as claimed in claim 1, further comprising evaluating identified incorrect data packets and identified correct data packets in each definable time interval.

3. (Previously presented) The method as claimed in claim 1, further comprising forming a ratio of identified incorrect data packets to identified correct data packets.

4. (Previously presented) The method as claimed in claim 1, wherein address records and/or check records are used as the expected data records.

5. (Previously presented) The method as claimed in claim 1, wherein the monitoring is carried out on the basis of a discrete transmission channel without any memory by means of a functional relationship, which is based on a Bernoulli distribution, between the probability of receiving an incorrect data record of a specific length and a maximum error rate which can be predetermined.

6. (Previously presented) The method as claimed in claim 1, wherein the error-based limit value is defined as a product of an error rate, which is or can be predetermined, and a number of bits within the expected data record.

7. (Previously presented) The method as claimed in claim 1, wherein the monitoring is performed by at least one slave subscriber and/or at least one master subscriber.

8. (Previously presented) The method as claimed in claim 1, wherein, in order to carry out the monitoring process, information is transmitted about identified incorrect and/or correct data packets from the at least one subscriber expecting the data record to at least one monitoring subscriber.

9. (Currently amended) An apparatus for monitoring a transmission of data packets, each of which having a payload data, between at least two network subscribers, comprising

means for safety-based monitoring of an error-based limit value, which can be and/or is predetermined, for response to identified incorrectly transmitted data packets and identified correctly transmitted data packets; and

means for determining, before the respective data packets are completely received by the network subscribers, incorrectly and correctly transmitted data packets on the basis of an expected data record which is embedded within the payload data of each data packet.

10. (Previously presented) The apparatus as claimed in claim 9, wherein the means for safety-based monitoring is designed to carry out an evaluation of identified incorrect data packets and identified correct data packets in each definable time interval.

11. (Previously presented) The apparatus as claimed in claim 9, wherein the means for determination responds to address records.

12. (Previously presented) The apparatus as claimed in claim 9, wherein the monitoring means is designed for a discrete transmission channel without any memory, and, based on a Bernoulli distribution, form a functional relationship between the probability of receiving an incorrect data record of a specific length and a maximum error rate which can be predetermined.

13. (Previously presented) The apparatus as claimed in claim 9, wherein the error-based limit value is defined as a product of an error rate, which is or can be predetermined, and a length of the expected data record.

14. (Previously presented) The apparatus as claimed in claim 9, wherein the means for determination is associated with slave subscribers, and the means for monitoring is associated with at least one slave subscriber and/or one master subscriber.

15. (Previously presented) The apparatus as claimed in claim 9, wherein the means for determination is associated with network subscribers, which are designed to transmit appropriate information to at least one monitoring subscriber in response to identified incorrect and correct data packets.

16. (Previously presented) A network having an apparatus as claimed in claim 9.

17. (Previously presented) The network as claimed in claim 16, further comprising at least one bus system that is in the form of a ring, line, star or tree.
18. (Previously presented) The use of a network as claimed in claim 16 further comprising a function selected from the group consisting of: for building control technology, for the process industry, for the manufacturing industry, for passenger transport and for operation of an automation system.
19. (Previously presented) The apparatus as claimed in claim 9, wherein the means for safety-based monitoring is designed to form the ratio of identified incorrect data packets to identified correct data packets.
20. (Previously presented) The apparatus as claimed in claim 9, wherein the means for determination responds to check records.
21. (Previously presented) The apparatus as claimed in claim 9, wherein the means for determination is associated with slave subscribers, and the means for monitoring is associated with at least one master subscriber.
22. (New) A method for monitoring a transmission of data packets, each of which having a payload data, to network subscribers, comprising:
 - embedding an expected data record within the payload data of the data packets; and
 - performing a safety-relevant verification of the transmission with respect to compliance with an error-based limit value by checking a transmitted data record against the expected data record, before the transmitted data packets are completely received by the intended network subscribers.